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ABSTRACT

This paper discusses the role of a Distributed Technology Coordinator at the University of Colorado at Boulder in helping faculty (particularly composition faculty) utilize technology as part of their teaching. It begins by discussing how the Distributed Technology Coordinator establishes relationships with and acts as liaison between university faculty, Information Technologies Services staff, and deans and directors. It then discusses the process of working with these groups, which includes: (1) assessing the technology landscape on and off campus; (2) helping faculty evaluate and use technologies; (3) dealing with faculty learning preferences and perspectives; and (4) helping faculty through the retirement of obsolete technologies. It continues by presenting recommendations for supporting faculty in technology use. It concludes by listing factors contributing to the success of the program. (EF)

Challenges in Supporting Faculty Who Use Technologies in Composing Communities

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Faculty members who want to use information technologies when they teach often face a variety of pressures. For example,

- The pressure to work within a very limited budget,
- The pressure to devote very little time and energy using those technologies (at the risk of jeopardizing their tenure or post-tenure reviews)
- The pressure to keep up-to-date with the rapidly changing technologies.

In the spring of 1998, administrators at the University of Colorado at Boulder realized that they needed to do more than they had in the past to help faculty face these pressures. However, they also realized that simply making technologies available to the faculty was not enough to ensure that the faculty would use the technologies. So to address this problem, University administrators created a number of support systems to help faculty.

One of these support systems was the Distributed Technology Coordinator program, which placed nine technology coordinators in schools and colleges across the University (see Fig. 1) to help faculty use technologies in their teaching, research, and creative works.

[1] Note: This paper includes a section on deans and directors that was omitted from the paper read at the conference due to time constraints. It has also been edited since the conference.

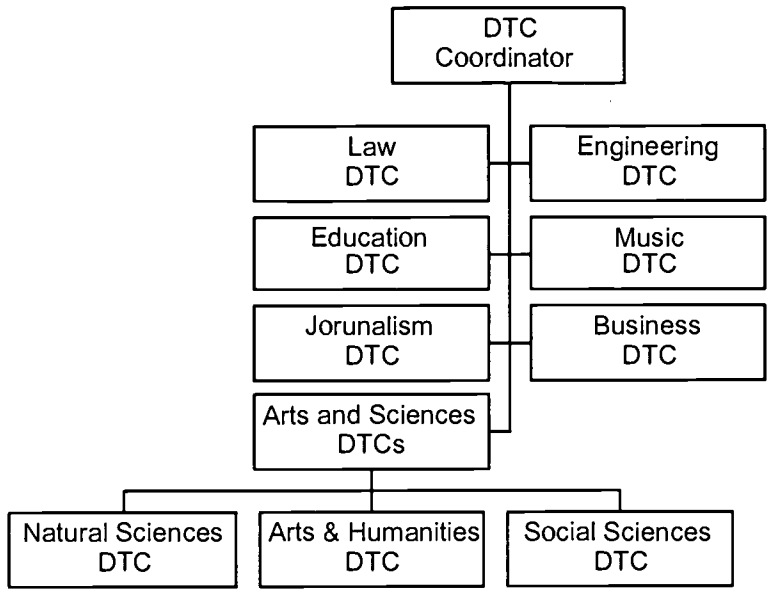

Figure 1: Organizational Chart Showing the Distributed Technology Coordinators.

I am one of those coordinators, and I work with approximately 260 full-time faculty, as well as many other instructors and graduate teaching assistants in the Arts and Humanities Division of the University of Colorado at Boulder, which consists of thirteen departments (see Fig. 2). This division includes the departments of English and Comparative Literature.

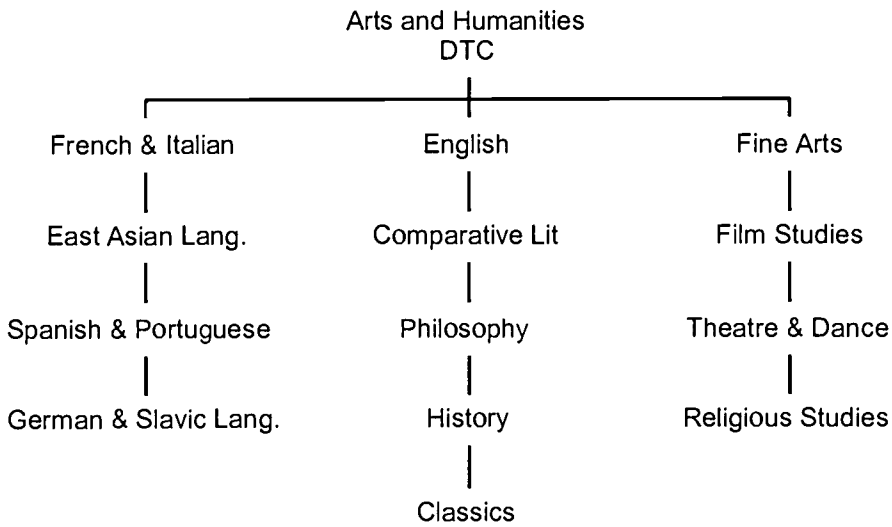

Figure 2: Departments Served by the Arts and Humanities Division DTC

As a technology coordinator, I find myself frequently attempting to create and build relationships with faculty, our Information Technologies Services staff, and with deans and directors. These three groups on campus have a history of tension among them, and a large part of my job is to create a sense of shared community among them. I like to think that I do that through being the "human and personal face" of each group when I

encounter another group. To many faculty members, I am Information Technology Services personified. To many staff in Information Technology Services, I am a person who has his pulse on the technology needs and interests of the faculty. To administrators (such as deans and directors) I am a person with the division-level view of faculty technology needs and technology use. Each group calls upon me to represent the other groups in discussions, and to communicate information to the other groups.

Working with Deans and Directors

When I work with deans and directors, they are typically seeking my help in evaluating and eventually supporting the use of technologies on campus that are low cost, widely available, and hopefully not very buggy. And they are interested in finding ways to assess the technologies so they can defend their investment in them, and hopefully argue for more funding in the future. They are also interested in finding technologies that faculty members want to use, so sometimes they are willing to compromise on these criteria if vocal faculty members like a technology that does not meet all of those criteria.

I walk a line between being an advocate for faculty and their technology needs when I address deans and directors; and being an advocate on behalf of the administration to appeal to faculty to keep in mind the costs, the need for standardized support, and the need to assess the use of the technologies.

Working with Information Technology Support Staff

When I work with Information Technology Services support staff, I often help them by representing faculty interests when they are hoping to change or improve their service. Often the support staff will consider making changes that make it easier for them to work with scarce resources to support the wide variety of information technologies in place on campus already. And often they are interested in getting into the "mindset of the faculty." Many technology support staff find faculty behaviors puzzling, and I find myself frequently offering theories to them about why faculty behave they way they do toward them. For example, recently I explained to a manager in Information Technology Services why so many faculty members in the Humanities bristle at the customer service model being invoked on campus. From his background as a telecommunications service provider, the customer service model was a very natural model to use, and he hadn't considered before how that model could have negative implications for faculty.

Working with Faculty

When I work with faculty, I typically try to help them use technologies to do something they can't in their current method of teaching. For example, I might show a professor how to use Daedalus or WebCT to allow her to form student groups throughout the semester. Or I might help a professor learn to capture video footage, edit it, and prepare it for display in class or on a web site. Or I might discuss with a professor how he can best access other technology resources on campus. For example, I recently referred a French professor to our graphics expert, with whom he is working to create a Web presentation with synchronized images, sound, and scrolling text.

Assessing the Technology Landscape on and Off Campus

This kind of one-on-one, tailored consulting requires that I contemplate the information technology landscape on campus, and the general technology needs of the faculty of the Arts and Humanities division whom I serve. It's an ongoing process in which I'm regularly gathering and analyzing information.

When I'm not meeting with faculty, I am regularly asking questions about information technologies and uses for those technologies. For example, I often ask questions like:

- What can available information technologies do?
- Of these, which technologies are supported by our Information Technologies support staff?
- How hard are these technologies to learn?
- How expensive are these technologies?

I also think about faculty-use-of-technology questions like:

- How do the faculty in this division teach?
- How have faculty in this division used technologies in the past?
- Were they successful?

And I think of ways to merge faculty uses for technologies with technologies. So for example, I ask questions like:

- Is there a fit between the teaching methods used by faculty and the current crop of information technologies?
- Will existing, off-the-shelf technologies work for them? Or would faculty need to tailor the technologies to suit their teaching methods?
- Are these technologies installed on their computers currently, or will they have to buy them or download them?
- If faculty adopt these technologies, can they re-use what they have created in other technologies?

  That is, if they design a curriculum module in a Microsoft product, and they have the ability to save their work in Rich Text Format (RTF); will that format be supported by other applications? Likewise, will that format be supported over time so the initial design embedded in the technologies can be reused and not abandoned?

Helping Faculty Evaluate the Technologies

When I meet with faculty I try to help them feel more comfortable in critically examining and using technologies. I think this is very important because many faculty members confide in me that they feel peer pressure from their colleagues and from their students to use technologies in their teaching. Students, for example, often approach their teachers to ask them why certain course information is not on the Web. Many faculty members feel as if this "Information Technology Express Train" has blown past them and left them in the dust; and they hope that I can help them catch up, at least somewhat. By urging them

to critically examine their technology use, they can get beyond the pressure to adopt a technology, and examine whether adopting a technology makes sense in their situation.

This involves in part, asking them questions like:

- Can they learn the technology they need quickly?
- Is there support (especially on campus) in place to help them use the technology they are considering?
- Will they have the funds in place for ongoing software and hardware purchases they will need to make?
- Are they considering a technology that will likely be re-usable later on when new technologies become available or if the software vendor they are using goes out of business?
- Does the technology they are considering support or enhance the way they teach or want to teach?

  For example, if a faculty member is considering WebCT, I try to prompt her to think about what kinds of communication WebCT facilitates; such as syllabi, and "content modules;" and what kind of communication it "buries," such as discussion boards and group presentation areas. I try to prompt her to think about other technologies she could use that may or may not improve upon WebCT's implementation. And I try to help her to see the value of her current method of teaching and that it may or may not be a good idea to add technology into her teaching practice.

Also, I try to help faculty members identify any implications for how adopting these technologies might affect their ultimate goal of attaining tenure or surviving their post-tenure review.

Teaching faculty to use those technologies

If we decide to adopt a technology, then my work with a faculty member shifts from analyzing technologies to helping the faculty member learn to use the technologies.

My goal (because of the large numbers of faculty I serve) is to teach faculty members to be self-sufficient with the technologies they adopt. Like those of you who teach composition, I try to scaffold my instruction so that in the beginning, I work side-by-side with them. Over time, however, I try to fade into the background, and only offer advice when asked or when something really wrong is going to happen (for example if a faculty member is about to accidentally delete a file).

As I am teaching faculty members, I try to offer analogies that might help them predict how to use the technology they are learning. For example, if they are using Netscape Composer, I might tell them that Composer acts a lot like Microsoft Word, it is a kind of word processor whose output is web pages instead of printed pages. Of course, analogies like these only go so far in helping people predict what they can do, so I also point out where the analogy breaks down. For example, I might tell them that Composer is only the

editing part of the product and Navigator is the display part, whereas Microsoft Word combines both editing and display in a single view.

Fortunately most often I am working with highly motivated people who are expert learners. So I try to let faculty members guide their learning so they learn what they need to learn when they need to learn it. I also try to teach them on their own computer, so we are working in their own environment with tools I know they have. And later, when they want to use the technology in a different way, they call me back and I show them how to use the technology to accomplish their new task.

This method of teaching has the advantage of linking their learning to their specific needs. Also, it has the advantage of not overwhelming them with all the features and functions the technology provides.

Faculty Learning Preferences and Perspectives

As you can imagine, the faculty I work with are quite varied in their learning preferences and perspectives. I have noticed two different perspectives faculty members tend to take toward technology that seem to affect their learning experience. On the one had, I work with faculty members who see technology use as a fun and interesting problem that has a solution. These faculty members seem to be more successful in their learning, and they seem to want to work with me on an ongoing basis. In contrast, other faculty members see technology as a robust tool that should be usable, but that is failing them. These faculty members tend to have more trouble learning technologies, and they tend to not want to continue learning other technologies once they have learned one. When working with these faculty members, I try to help them see that it is healthy and helpful to keep in mind that technologies often are not robust, but are more like problems to be solved.

Faculty members also seem to vary on the information modalities they prefer when learning technologies. Some ask for documentation on how to use a certain technology and then they retreat to their offices to learn the technology. Others want me to work with them one-on-one as much as possible. And still others prefer classroom instruction. So I try to provide help in more than one modality if possible.

Helping faculty through the process of retirement of technologies.

One unfortunate side effect of integrating information technologies into teaching is that the rate of change of information technologies is much more rapid than the rate of change of teaching methods. As a result, some of the design effort put into using technologies to support teaching can be lost because products become obsolete and sometimes there is no easy way to "port over" the teaching method that is buried in an old technology.

For example, one faculty member I worked with had a multimedia curriculum module that served as supplement to her Chinese language class. This curriculum module contained hours of video on laserdiscs that were integrated with quizzes and other pedagogical learning and assessment mechanisms.

She won awards for this work when it first was produced. However, she didn't realize that after several years of use, the technology she was using (including defunct software, old 286 PCs and laserdiscs) was becoming obsolete. And by the time she talked to me, it had become so obsolete that we couldn't find a way to capture the content and repurpose it into a new platform. Sadly, now that work is lost. It's embedded in old technology that can't be resurrected (or at least not without significant effort).

As a result of my work with her, I try to help faculty plan for being able to de-couple their pedagogical method and design from the actual technology that implements the design. For example, I try to get them to think of ways to produce curriculum modules in formats like RTF and HTML that can be imported to a new technology later.

Working with All Three Groups

In most of my work to draw together the three main groups I work with (faculty, administrators, and IT staff) I find myself in a fair number of balancing acts. And these balancing acts are really efforts to represent the needs and desires of each of the three communities to each other and to the University at large.

I find myself having to strike a balance between encouraging and helping faculty use technologies that on the one hand might make a difference in their work, and on the other hand, might require them to increase their workload enough to impact their tenure- or post-tenure reviews.

I try to find a balance between helping faculty consider a technology that might be ideal for them in their discipline (for example Daedalus), but for which they may have to look for support off campus; vs. helping them consider a technology that is more widely available, and one that we support on campus.

I try to balance helping faculty consider a new, experimental, and potentially buggy technology (but one about which they could potentially publish) vs. considering a more "proven product."

I find it important to strike a balance between considering a low-cost and widely available technology (such as NetScape Composer) and a higher-cost, richer, and more effective technology (like Macromedia Dreamweaver).

Also like those of you who teach composition, because there isn't enough of me to go around, I have to strike a balance between working side-by-side with faculty, and enabling them to learn to use technologies on their own.

Implications for Supporting Faculty who Compose Communities

So what implications for composing community can we take away from my experience? To successfully support faculty in technology use, one should:

Consider ways to make the training scalable. For example,

- Attempt to teach faculty to be self-sufficient in their learning.
- Try to develop "one-to-many" methods of helping faculty, such as training sessions, documentation, and our on-campus Web-based training system for those who prefer it.
- Give faculty members analogies and strategies for approaching similar technologies in the future.

Consider ways to make curriculum modules robust. For example, finding ways to separate the design of the pedagogical method from the way the technology implements the design.

Consider the teaching methods faculty members use (lecture, discussion, etc.) and whether technologies could enhance those teaching methods.

Consider the cost of technologies to be adopted, including the time required to learn them, and the price of the technologies.

Consider the ability various technologies have to fit in the existing University support system. This would include

- The ability of any curriculum modules produced by the technology to be re-purposed.
- The likelihood that the technology would be around in the future.
- The "supportability" of technologies (that is, how possible is it for support groups on campus to lend support to this technology)?

Conclusion

The Distributed Technology Coordinator (DTC) program at the University of Colorado at Boulder has been very successful in a short time. Faculty survey responses have been very positive. The one drawback faculty members have mentioned is there aren't enough DTCs.

I suspect the success we have experienced has been in a large part due to several key factors:

- We are distributed among the academic units we serve.
- We focus on technologies that may help our academic units.
- We are happy to discourage the use of a technology, if appropriate.
- Through the process described in this paper, we balance competing needs that affect faculty and we find an appropriate fit between a technology and a faculty member.

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